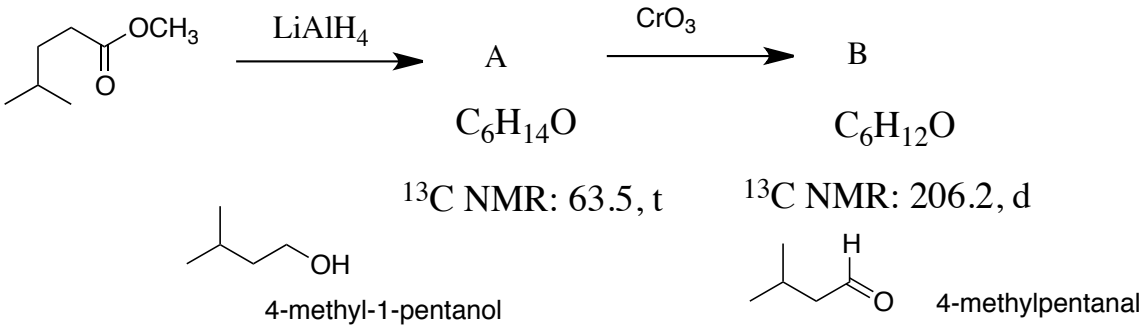
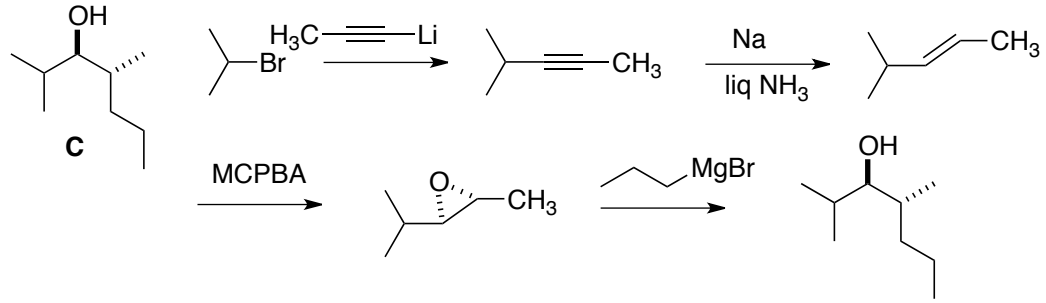
Chem 332
Spring 2013
Homework #1
Due 10 a.m.Monday, Feb 11th

Name___key_____

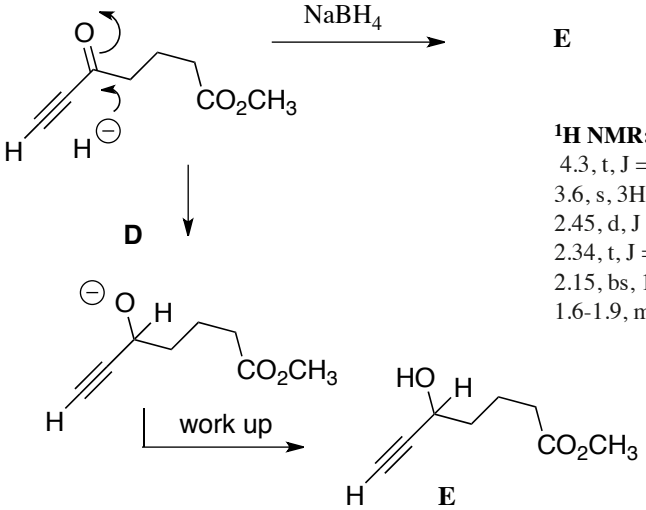
1. (10 points) Deduce the structures of **A** and **B**, and name **A** and **B**.




2. (10 points) Using any starting materials that conribute three or fewer carbons to the final product, outline a synthetic route to **C**. Absolute configuration is not important, but relative configuration is.




3. (10 points) Deduce the structure of **E**, and draw an arrow-pushing mechanism for its formation. NaBH4 can be represented in the mechanism as $H^-$. Mild acid workup is assumed.




**E** $C_8H_{12}O_3$

**$^1$H NMR:**
4.3, t, J = 7.2 Hz, 1H
3.6, s, 3H
2.45, d, J = 2.1 Hz, 1H
2.34, t, J = 7.0 Hz, 2H
2.15, bs, 1H (exchanges)
1.6-1.9, m, 4H

**$^{13}$C NMR:**
173.8, s
84.6, s
73.1, d
61.9, d
51.5, q
36.9, t
33.6, t
20.5, t

For $^{13}$C tables beyond the spectroscopy text, see http://www.chem.wisc.edu/areas/reich/Handouts/nmr-c13/cdata.htm